Whetzel H H - Rankin W H

SPECIAL CROPS

NEW SERIES. MAY, 1910. VOL. 9. NO. 93.

EDGEWATER PARK, SKANEATELES, N. Y.

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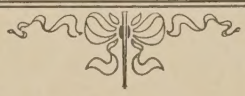
We Want Cultivated Ginseng.



Having made a specialty of cultivated root since it was first placed upon the market, our expert experience in the handling of it enables us to pay you more than any other house. We have always been the principal buyers and still continue so, notwithstanding what other houses may claim; and if you sell without writing us, YOU ARE MAKING A MISTAKE and in all probability taking less than your root is worth. Should you wish your Ginseng held separate on arrival and an offer submitted subject to your approval, we shall be pleased to do so. In this way you take no risk and know exactly what you are going to get for your lot. Would be glad to have you write us at any time and our views on the market and advice as to handling, etc., will be at your disposal. We stand express charges on all lots of five pounds and over and remit same day as shipment is received, in whatever form desired. Would be pleased to have you ship us whether your lot is large or small. We also buy Wild Ginseng and Golden Seal.

BELT, BUTLER CO.,

140 Greene St. NEW YORK

Tests of Spray Mixtures for Alternaria Blight of Ginseng.

By H. H. WHETZEL and W. H. RANKIN.

ALMOST from the time the Alternaria blight first made its appearance in the ginseng gardens of this State, Bordeaux mixture has been the fungicide commonly applied for the control of the disease. Its effectiveness has been demonstrated repeatedly by growers in this and other States. As is to be expected, however, failures to control the disease have been common. In most cases the grower has been inclined to attribute his failure to the Bordeaux. That it has not been the fault of the Bordeaux is practically certain, nevertheless the result has been that other spray preparations have been proposed and tried by many growers as substitutes for the Bordeaux. Each newly tried mixture has had its advocates who have reported remarkable success with it. That some of these claims have been based upon insufficient evidence is clear when the facts in the case have been known. However, some of our best and most up-to-date growers, among whom may be mentioned A. P. Storrs and Dr. I. C. Curtis, have for several years held, that by the addition of Paris green to the Bordeaux, its effectiveness in controlling the Alternaria was materially increased. Their conclusions are based upon actual field experience. The senor writer has always held that the evidence, strong as it appeared to be, was not sufficient to warrant a final acceptance of these growers' conclusion. Therefore in connection with the investigation of the diseases of ginseng made during the summer of 1909, the junior writer conducted several sets of experiments to determine the relative efficiency of Bordeaux, Bordeaux plus Paris green, and other preparations or combinations recommended for controlling the Alternaria Blight.

Before taking up a discussion of these experiments and the results obtained, it may be well to consider briefly the scientific basis for the determination of the fungicidal properties of any given preparation. Infection of the ginseng leaves by the Alternaria fungus occurs during rainy periods and probably at night when there are heavy dews. The spores of the Alternaria are produced in lesions on the stems and leaves and are distributed by the wind; these spores falling on a leaf, stick and remain there until a rain or perhaps a heavy dew covers the leaf with moisture. Each little spore or "seed" then germinates and sends out germ tubes or "roots." These germ tubes penetrate the epidermis of the ginseng leaf, and once inside they ramify through the tissues of the leaf, forming a large watery spot and later a dead area. A spray mixtures to be of value must prevent the germination of the spore or kill the germ tubes of the fungus as they grow from the spore, before they enter the plant tissues. Thus infection is prevented. A fungicide, to be effective, must be applied before the spores germinate. Therefore *spray before* rains and *not after*. Bordeaux mixture and many other good fungicides do not wash off during a rain if they are on in time to become dried. A fungicide is a *preventive*, usually not a *cure*.

EXPERIMENTAL WORK.

Lacking the proper acreage and the time to carry on extensive experiments in the field, a simple, but accurate laboratory method was used to test the fungicidal value of the several preparations. The method of manipulation was as follows:

Different strengths of the different preparations were mixed up in small quantities. These were sprayed on clean glass slides with an atomizer. The slides were then laid away to dry for twenty-four hours. Spores of the Alternaria were taken from diseased spots on the stems and mounted in drops of water on the sprayed slides. Others were placed on clean unsprayed slides in drops of water. These served as checks. If a given spray mixture on the slides prevented the spores from germinating, then it should follow that the same preparation if sprayed on the leaf would do likewise. If it did not prevent germination on the slide, the spore on the sprayed leaf should go right ahead, germinate and produce infection just the same as if the mixture were not there.

Taking the slides prepared as above with spores in drops of water on them, the accompanying table was compiled showing the results. The terms used in the table to indicate

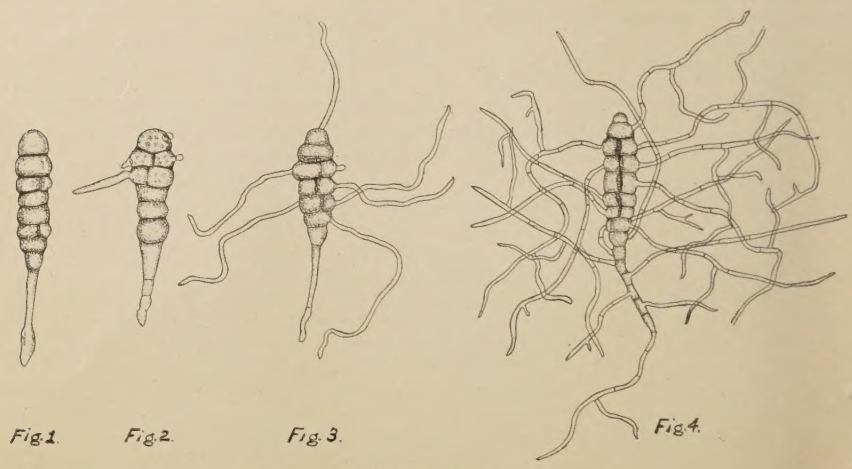


Fig. 1. Fig. 2. Fig. 3. Fig. 4.

the degree of germination are to be interpreted as follows:

"None" (Fig. 1), meaning that no trace of germ tubes was to be found.

"Very slight" (Fig. 2), germ tubes just started but evidently killed before elongation could take place.

"Slight" (Fig. 3), germ tubes grew to some length but were abnormally short and unbranched as compared with germinated spores in the checks.

"Complete" (Fig. 4), germ tubes long and branched not evidently different from those in checks.

The test of each fungicide was duplicted in each trial from four to twenty-four times. The slides were examined and results recorded in each case four days after the sports were put to germinate.

When the results obtained were "none" it signifies that the mixture should be a good preventive for the blight. Those which gave complete germination are probably of little or no use in preventing the blight, as the experiment shows that the mixture in question does

Mixture.	Germination 1st Trial.	Germination 2nd Trial	Germination 3rd Trial.	Germination 4th Trial.
Bordeaux 5-5-50	None	Very Slight	None	Very Slight
Bordeaux 2½-2½-50	None	Very Slight	None	Very Slight
Bordeaux 5-5-50 and Arsenate of Lead 4 lb.-100 gal.	None	None		
Bordeaux 2½-2½-50 and Paris Green 1 lb.-100 gal.	None	Very Slight	None	None
Paris Green 1 lb.-100 gal.	None	None	Very Slight	Very Slight
Paris Green 2 lb.-100 gal.			Complete	Complete
Lime Milk 1 lb.-10 gal.	None	Very Slight	Slight	
Lime Water (clear) 1 lb.-10 gal.	Very Slight	Complete		
Paris Green 1 lb.-100 gal. and Lime Milk 1 lb.-100 gal.			None	Very Slight
Sulphur Arsenate Grasselli's) 1 lb.-100			None	Very Slight
Grasselli Lime Sulphur Summer Spray Mixt. 1-10			None	Very Slight
Lime Sulphur (Grasselli's) 1-75	Slight	Complete	Complete	
Lime Sulphur (Niagara)) 1-75	Slight	Complete	Complete	
Arsenate of Lead 2 lb.-100 gal.	Slight	Complete		
Potassium permanganate N-1000	None	Complete		
Carr's Anti-Blight ½ strength*			Complete	Complete
Carr's Anti-Blight ¼ strength*			Complete	Complete
Boxal 10 lb.-100 gal.			Complete	Complete
Pratt's Sulfocide 1-75			Complete	
Copper Sulphate ¾ lb.-1000 gal.			None	
Copper Sulphate ¾ lb.-100 gal.			None	
Water Checks (several)	Complete	Complete	Complete	Complete

*Full strength, according to the originator of this preparation, is 2 teaspoonsful to 1 gal water. (Letter of No. 1780, July, 1909.)

not inhibit germination and this is, of course, the essential thing.

Looking over the table it appears that the fungicides most effective against the Alternaria are Bordeaux (full and half strengths), Bordeaux with Paris green, Paris green and lime milk, Paris green alone (1-100 or stronger), lime milk 1 pound 10 gal., sulphur arsenate (Grasselli), 1 pound 100 gals, and possibly Grasselli's lime sulphur, summer spray, 1-10.

The Paris green and lime milk, alone and in combination, seem to be promising unless for some reason they may prove injurious to the ginseng plant itself. The effectiveness of the Bordeaux at the strengths used was so complete that any added effect which the Paris green had was not evident in the tests. Arsenate of lead at the dilutions used does not appear to have marked fungicidal effect on the Alternaria spores, and therefore probably does not add to the fungicidal value of the Bordeaux. The lime sulphur sprays of both the Grasselli and the Niagara brands, and Pratt's sulfocide were not effective in preventing the germination of the Alternaria spores at the dilutions tested. Carr's anti-blight and boxal seem to be in the same class, and can hardly be expected to control the blight when we find that the Alternaria spores will germinate in them just as well as in water.

The grower must bear in mind that these experiments were in the laboratory and not with the ginseng plant. But the methods used duplicated the field conditions as near as was possible and the results should be significant. The spray mixtures which have been found to effectually prevent germination are recommended to be tried by the growers in an experimental way. Do not go too heavily into these new sprays. Depend upon Bordeaux, full or half strength, until the others have been tested by use in the field. Paris green may be added at the rate of one pound to one hundred gallons of the Bordeaux.

We are pleased to call the attention of our readers to the evidence brought out by these experiments in favor of Paris green as a desirable addition to the Bordeaux. In behalf of the growers, as well as ourselves, we desire to acknowledge our indebtedness for this valuable suggestion to those growers who first tested this combination and brought it to our attention. We are always glad for such suggestions and will be pleased to test them out so far as is possible.

Insect enemies do not appear to be very common or destructive to ginseng except in rare or isolated cases. There would seem, therefore, to be no object in adding arsenate of lead to the mixtures. It may be well to try out some of the combinations or preparations which from the above experiments seem to promise results. The combination of lime milk and Paris green seems especially worthy of trial in comparison with Bordeaux. The use of Bordeaux, half strength (2½-2½-50) would appear to be warranted from the evidence adduced above.

We will be glad to assist any grower in the State in laying out co-operative experiments along these lines.

Department of Plant Pathology,
N. Y. State College of Agricture,
April 18, 1910. Ithaca, N. Y.

Minutes of Annual Meeting of New York State Ginseng Growers' Association

St. Cloud Hotel,
Syracuse, N. Y., April 27th, 1910.

Meeting called to order by President C. M. Goodspeed at 11 A. M. Secretary-Treasurer F. P. Hakes being ill and unable to be present, A. P. Storrs was appointed temporary secretary. Minutes of the last meeting were read and approved.

On motion Professor Whetzel and Professor Rankin were elected honorary members of the association.

A letter from Prof. H. J. Weber, director of the School of Agriculture of Cornell University, inviting the association to hold its next meeting at Cornell University, was read and laid upon the table for consideration.

A letter from Secretary-Treasurer F. P. Hakes advising the association of his inability to be present was read.

The president appointed the following nominating committee to report at the opening of the afternoon session: A. P. Storrs, chairman; D. H. Rogers, J. A. Thomas.

On motion a recess was taken until 1 o'clock P. M.

Afternoon Session.

Meeting was called to order at one o'clock by the chairman. The nominating committee reported the following nominations for officers for the ensuing year:

Dr. C. E. Ingalls, president.
Dr. I. C. Curtis, first vice-president.
Mr. James Ready, second vice-president.
F. P. Hakes, secretary-treasurer.

Executive Committee—E. D. Crosley, W. E. Mills, F. . Horn, James Ready, E. W. Rood.

Membership Committee—I. C. Curtis, Levi Timmerman, D. H. Rogers.

Auditing Committee—C. E. Ingalls, J. A. Thomas, H. W. Childs.

On motion the report of the nominating committee was received and adopted and the clerk authorized to cast a ballot for the persons nominated, which was done and they were declared elected.

Professor Rankin read a very interesting and instructive paper on "Spraying," which was followed by a short address by Professor Whetzel on "Root Diseases," and Professor Rankin read a second very exhaustive and interesting paper on "Diseases of Ginseng." All of these papers were discussed at length and created a great amount of interest and furnished the association with very valuable information. These papers will be published in full in the near future in SPECIAL CROPS.

Professors Whetzel and Rankin exhibited a large number of mounted specimens showing the effect of the diseases discussed upon the ginseng plant and roots, which are very interesting and instructive.

The membership committee reported favorably upon the following named persons and they were elected unanimously as members of the association: Bach Fur Company, 15 E. 12th Street, New York City; Edgar H. Prosser, Lyconing, N. Y.; Wm. E. Mowrer, South St. Joseph, Mo.; S. H. Graham, Ithaca, N. Y.; L. D. Conrad, Willett, N. Y.; Ernest B. Dye, Antwerp, N. Y.

On motion a rising vote of thanks was extended to Professors Whetzel and Rankin for their courtesy in attending the annual meeting, as a slight expression of the appreciation of the association for the work they have done in the interest of the ginseng growers.

An opportunity was given to make contributions to the Whetzel fund for the year 1910. This was responded to by many of the members present.

On motion, Professor Whetzel was authorized to continue the work of investigation during the summer and was assured that the necessary funds had been provided to carry the work on.

On motion it was resolved to hold the next meeting of the association at Ithaca in November, the date to be fixed by the president and Professor Whetzel, the meeting to continue for two days. It was also agreed that invitations should be extended to as many of the ginseng growers of other States as were interested.

On motion the meeting was adjourned.

The So-Called Whetzel Fund.

At the annual meeting of the Association of New York Ginseng Growers, held at Syracuse April 27th, arrangements were made whereby the work of investigating the diseases of ginseng will be continued under the supervision of Professor Whetzel. While it is a fact that sufficient funds are not yet at hand, yet the association felt that the work should not be dropped, and the association, I understand, have agreed to see the matter through. This action places the matter where it is an assured fact that the work will go on, and if the growers at large do not take hold of the matter as they should, individuals will meet the deficit.

All that have subscribed with us and have not as yet paid in, will please do so at once, and we will turn the matter so far as we have had anything to do with it over to the secretary of the New York State Association. Now that it is an assured success we hope all ginseng growers will contribute. It is a shame to allow the half dozen men to bear this burden when all alike will get the benefit.

PERSONAL to the reader of this line. The editor asks you personally if you have not paid anything as yet to this fund to at once send your contribution to Secretary Frank P. Hakes, Cortland, N. Y.

There is about $300 still to be raised, as the following list of contributions will show:

WHETZEL FUND.

SPECIAL CROPS LIST.

C. M. Goodspeed	$10.00
John Reis	1.00
Otto Kempfe	1.00
A. W. Apps	1.00
J. T. Ames	2.00
J. L. Bunting*	1.50
A. Hand	1.00
S. H. Briggs	1.00
Rose E. McDonald	5.00
W. L. Mead	2.00
A. Eastwood	5.00
Ontario, Canada, Association	3.00
W. H. Mercer	1.00
E. C. Ayers	3.00
Dr. G. Chaney	1.00
Peter Dautrich	3.00
W. P. Warren	3.00
Floyd Palmer	2.00

Pittsfield Ginseng Gardens*	5.00
Wm. E. Mowrer	10.00
A. J. Berberick	2.00
R. L. Sandridge	2.00
S. H. Graham	2.00
W. J. Barber	2.00
Dale S. Pierce	2.00
M. W. Bradshaw	.50
H. A. Browning	1.00
H. P. Langdon	1.00
William Hoyt	1.00
Joseph Ketterer	1.00
E. Strubing	1.00
Ed. M. Doyle	$ 2.00
E. A. Richie	2.64
J. E. Kalter	1.00
C. H. Harper	2.00
Northumberland Root Co	2.00
O. C. Sarver	1.00
Swartz Bros	2.00
A. Colberg	2.00
Fred Binkard	2.00
Austin Taber	2.00
C. B. Wick	1.00
Chas. Leggett	.50
Frank Bartleson	1.00
P. Baldwin	1.20
Mrs. A. L. Kelley	5.00
E. A. Corey	1.00
W. A. Northrup	1.00
Robt. C. Uecke	1.00
F. Laberteaux	2.00
Mrs. C. H. Barden	1.00
C. Van Nastrand	$ 1.00
Wallace Gladding	1.00
O. H. Pitkin	2.00
W. P. Kezar	5.00
O. Knutson	.50
Kirtland Ginseng Association	5.00
W. H. U	.50
C. N. Newton	1.00
T. N. Kincaid	2.00
Muncy Ginseng Co., W. H. Banzhaf	5.00
M. H. Keil	2.00
Interstate Ginseng Co., C. Bingham	5.00
E. L. Dillman	2.00
J. R. Pirtle	2.00
R. W. Hartman	1.00
James L. Hall	1.00
O. W. Pierce	5.00
I. F. Alexander	$ 2.00
M. M. Cook	1.00
Mrs. Thomas McKinny	1.00
A. P. Storrs*	5.00
Alvin Kneeskern	1.00
Thomas Mack	1.00
Edw. Renak	1.00
D D. Stranahan	1.00
William P. Tisher	1.00

* Not paid in.

Additions since last issue—BUT THESE ADDITIONS ARE COMING TOO SLOW. Just think of it, out of nearly 2,000 subscribers only 91 have so far contributed. If $500 is reached some one has got to be doing.

Edward H. Slater	1.00
L. A. Chamberlain	5.00
T. P. Coulter	1.00
Joseph Hines	1.00

The following is handed me by Secretary Hakes and we can only add that we heartily wish all growers would take this matter up.—EDITOR.

Mrs. George I. Hansell, Oswego	$ 2.00
F. L. Horn, St. Johnsville	3.00
J. S. Lodewick, New York City	5.00
E. L. Butler	5.00
John Newton, Denmark	5.00
C. P. Remore, Tully	2.00
Frank Timmerman, Apulia Station	5.00
L. M. Winans, Vestal	2.00
H. L. Watson, Newton, Pa	5.00
P. C. Wheeler, Cincinnatus, N. Y	3.00
Frank M. Carrier, Stittville, N. Y	1.00

FRANK P. HAKES,
Sec'y N. Y. State Ginseng Growers' Ass'n.

Stolen.

We use the above heading to attract attention. We do not know for sure, but here are the facts:

A friend and customer of ours in Pennsylvania sends us about twenty pounds of green root and in his letter he says this: "I am sending you by U. S. express, prepaid, about twenty-one pounds of green ginseng. I purchased this lot from a man who gave his name as ——— (we omit the name given), Sullivan County, Pa. He claimed to be a lumberman; said he had discovered a fine lot of wild ginseng; that he could bring me a lot of it and would be here again about next Tuesday with more of it. I told him to come and I would purchase what he would bring. He told an apparently straight story and the only reason I have to suspect him of fraud is that the roots appear to be larger and of more even size than I would expect in wild ginseng. Please give it careful inspection and notify me at once as to your opinion. I should have dried this myself but if it is stolen from someone's garden we

should try to find the thief." This letter was signed, but not having the writer's permission to publish it we do not give the name.

This root was shipped on the 11th and reached us the 12th, and within an hour after it arrived we wired the sender that there was positively no doubt but the root was cultivated and asked him to take proper means to catch the thief if he showed up again.

Now what we want is to know who in or near this locality has had root stolen. Please report to me at once all the facts. Some of our readers should know of this loss, and it is their duty to help even if it is not from their gardens.

You may ask how I can be so sure that it is not wild. To this question we answer, there is many things by which we know. The even, large size, is one, and most of the roots show where the end of the tap root sluffed off after planting and numerous fiber roots started out. And again the age of the roots as compared with size would preclude the theory of wild. Many show where they were trimmed when reset. And some show that originally they were wild and still have the original wild root, and higher up on the neck is the new growth that started out after they were transplanted. Most of these roots show to have been in a garden for at least four years.

C. M. GOODSPEED.

The Markets.

WE QUOTE:

Medium to large dark, free of fiber	$6.90
Average crops	6.80
Dark centers, long and ill-shaped or inferior from any cause	6.00
Medium to large, break chalk-white, rings around root (not up and down) and light and corky in texture	$7.00 to 7.25
Green root free of dirt	1.75

Above is for cultivated ginseng free of fiber. Express prepaid on green root.

Fiber is worth	$1.00

GINSENG—WILD.

Large, clean, nice root	$7.50
Average lots	$6.75 to 7.00

Trash and roots on string according to value.

GOLDEN SEAL.

Clean, dry root	$1.75

The fiber on this root should not be removed.

SENEGA ROOT.

Best grades	$ .75
Southern	.43

We do not pay express on Senega, or Seal, or green Ginseng, but do on dry Ginseng in lots of ten pounds or more.

Prices are liable to fluctuate. Ship your root and we will advise by return mail what we can pay, and hold until we hear from you.

C. M. GOODSPEED,
Skaneateles, N. Y.

Lead from North as well as South.

Dear Sir:—Although a Northerner by birth, long residence in North Carolina during my early manhood and constant business intercourse with Southern shippers of ginseng and other produce to my firm on this market for twenty-five years past, places me in as good a position to make intelligent estimate of doubtful practices in their shipments as any one in the business, and I protest against the insinuation in your March number, confining the practice of plugging with lead or other weighty substances of ginseng root to Southern shippers exclusively. We have had most artistic examples of plugging with nails, shot and melted lead in ginseng from New York, Pennsylvania and other States; horseshoes, stones and dirt neatly sandwiched with beeswax, as well as the product of the honey bee to assimilate with tallow, rosin and pitch—beef ta low blended with boiled potatoes and the services of country barbers employed to deftly shave the white hairs from skunks' pelts to get the price of the more valuable black fetid animal, and the honor of these practices not to be loaded on any section, State or people, but to be generously distributed from Maine to Texas and from the seaboard to the coast.

Very truly yours,

NEW YORK, HIRSH & LOWENSTEIN,
Per M. H. Lowenstein.

C. M. GOODSPEED, Skaneateles, N. Y.

Dear Sir—Yours of the 17th inst. at hand. In reply would say that I did not expect my weight would hold out, on account of the fact that the scales I used are old and not very reliable. Your weight is entirely satisfactory. Your check of $81.47 is about ten or twelve dollars more than I expected to get for this lot of root. My only regret is that I did not have more root to send you.

You may depend upon it that I shall always ship what root I have to sell to you.

Wishing you the greatest success, I remain,

Yours very truly,

Alba, Mich., GEORGE L. BALDWIN.

Nursery Stock and Soils Pertaining to the Production of Types and Sizes.

With some Fine Types of Two and Three Year old Ginseng Roots—(nursery stock.)

By OLIVER G. WILSON, Franklin, Ky.

THE photos show three prominent and favorite types of roots as grown by me. They are of fine shape and length. These roots measured from tip to tip 12 to 15 inches. The bodies are not entirely shown in the photos because of their great length. The two and three-year-olds are placed together, because I had in view the subject of types and not so much ages.

I wish to remark that these roots do not represent the largest grade, but are taken from the second grade. The idea to photograph them had not occurred to me until the first grade had been planted. The photos are exact as to size.

The object in showing these roots to the growers is twofold. First, to show that good stock can be and is raised in Kentucky; second, I wish to show what good stock is, and to demonstrate the principle to be observed in order to raise good roots, and they are, first, proper soil; second, deep, high beds with proper mulch; and third, absence of most rainfall during first season.

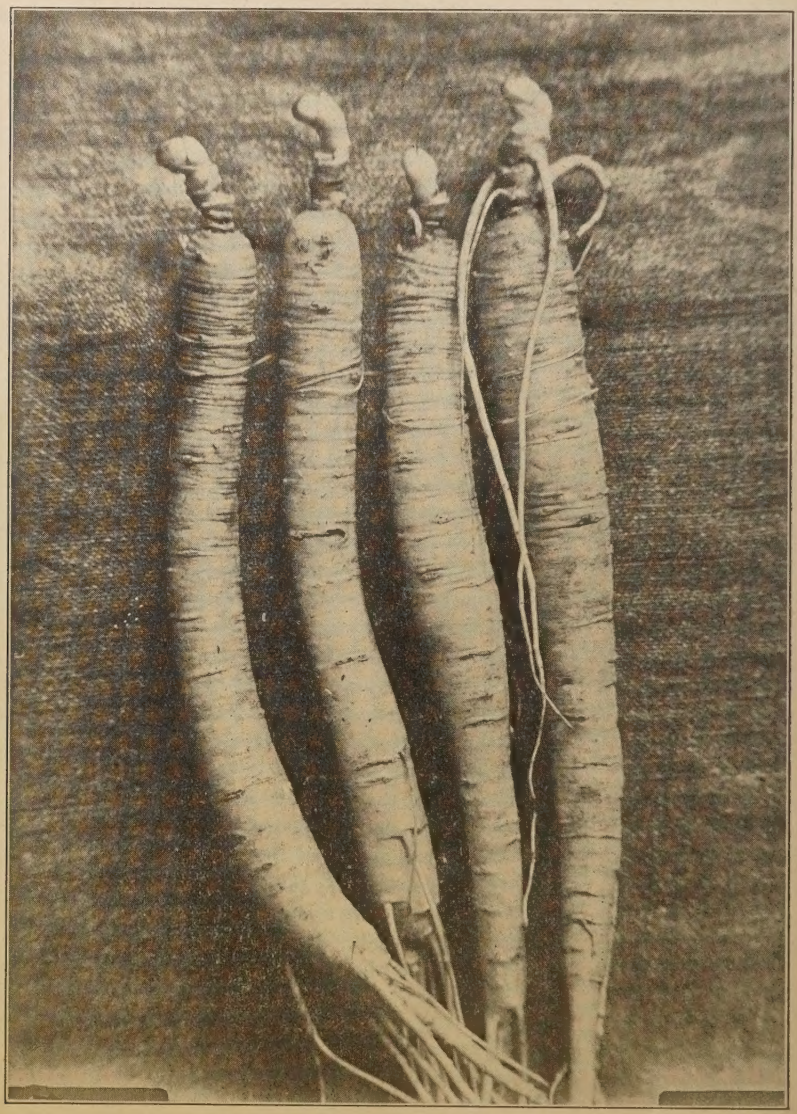
Proper soil, rich with rotted vegetable matter (humus); deep soil, fifteen inches at least; beds made high so as to drain well. The mulch should be of fine pulverized old leaves two and a half inches thick.

My beds are such as I describe, with a pound of raw bone meal to each 1 x 5 feet, *well forked into the soil clear to the bottom.* (What is meant by 1 to 5 feet is, to a 5-foot wide bed I use a pound to every running foot of bed length.) I sow the seed 1,000 to 1,200 to every four feet by five. This, with good seed, will give a heavy stand and yet not too heavy. With back of a rake tap seed into surface of soil good and put in two and one-half inches of old rotted leaves and the work is done.

I wish to state that the types of ginseng roots are the same everywhere, but unless soils are rich and deep, the best type of root will not be developed, because the long bodied and vigorous roots cannot be produced without the soil is very rich with the kind of soil that suits the ginseng plant and rich away down to a depth of eighteen inches or nearly so. *Humus* is the food for the ginseng plant. I supply it by forking into my already rich beds at least six inches of *pulverized and screened well rotted leaves each time I plant a crop of seed* (*ordinarily*). This need not be done, however, if the plants are to grow only one season, but if beds go to the second and third year it should be done to get best results. What we want in the nursery root is a *large, vigorous* growth with tenderness of skin, one that has been pushed and not one that has been dwarfed. The first will grow rapidly when transplanted, while the latter will in many cases never grow to a well developed and large, thrifty root for the market. The question of depth of soil may be well illustrated by relating the fact that I saw a lot of roots last fall that were grown for two and three years in a soil *very poor*, but the top of it was enriched by the decaying mulch to a depth of perhaps five inches. These roots were as large as the ends of one's fingers, yet but few were longer than a half to three-fourths of an inch, with fibers all over their short bodies. These roots were deprived of *soil food below the top of the ground*, where the mulch had decayed and enriched it to a slight extent. I never saw a lot of roots that were such curiosities to me. Let me remark here that not one of these roots of this *short-bodied type* would ever have made much departure from this type, but if grown for four or five years the market product would have partaken of the same shape pretty much, and while diameter might have attained good proportions, their shortness of body would have curtailed the weight greatly. It does not pay to plant out a root that never does much afterwards. While on the side of vigorous stock and of fine type we may count on an immensely larger yield with four to five years' proper growing.

I trust the question of types will be studied more carefully, that growers may realize the importance that attaches to it.

Everyone who has experimented with setting out old wild roots knows that they never make



3-year. 3-year. 2-year. 3-year.
NURSERY STOCK 1909—two and three-year-olds.

much, if any, *growth*, unless new stock forms from the neck of the old root. While my few old large roots of either wild or cultivated will gain in weight after replanting or when past a certain age, I have never known from my own, or the experience of others, a case of getting much return from a planting of wild stock, save in the case of very young roots. The reason is plain, as it lies in the fact of the plants having passed the age for vigor while young and *tender*. Notice the word *tender* that I use. Young, vigorous roots, or older ones, even if

2-year 3-year 2-year 2-year

NURSERY STOCK 1909—two and three-year-olds.

white and tender, may be characterized as vigorous *growing*, and when reset will continue growth. I have reset them of this class and condition that weighed two and a half ounces or better and know them to continue to grow on for years. And it may be said to be a good criterion to judge nursery stock by when I say note the smoothness and whiteness with tenderness of the root you wish to plant out for root growth afterwards. If many rings are around the roots it is positive evidence of the fact that the root has begun or has completed

NURSERY STOCK 1909—three-year-olds.

development, whether it be large or small. I have seen roots over fifty years of age that were not larger around than a big lead pencil and two inches long, yet very ringy and rough and pethy. Such a root had ceased to grow one might safely say forty odd years before.

Now a word about types and vigor for nursery roots for planting out and I close.

It takes good deep rich soil to produce them. (My nursery beds are twenty inches deep and as rich as can be made with old rotted leaves.) This condition that provides vigor of growth

is the same factor that develops the best types. The two desirable features are attained by one and the same means, *that is, large roots and shapely* roots, that produce fine types of roots for drying. One item to be well considered in connection with soils for nursery beds, however, is that for permanent beds where transplanting is made *should not be made so rich*. The soil for starting the young plant off finely should be changed and more clay added for producing the best grade of marketable product. As the richer soil has a tendency to produce too *fibrous* a character of roots and too much *fiber* is matured at the expense of root or body growth later on. There is no question in my mind but that a *rich clay subsoil* will produce the very highest type of marketable product. Experience has learned me a lot in these directions.

Perhaps I may have more to say about soils later on.

Forests Without Seeds—Bricks Without Straw.

(From *Arboriculture.*)

"Go therefore now, and work; for there shall no straw be given you, yet shall ye deliver the tale of bricks" (Exod. vi. 18).

It has been but a third of a century when the principal mountain slopes of Colorado and other Rocky Mountain States were clothed with coniferous forests, but a very large proportion of these mountain sides are now practically bare of vegetation.

During the same period Michigan, Wisconsin and other Northern forest regions have become equally bare of trees, the pine forests having become exhausted. The Gulf and South Atlantic region is rapidly becoming treeless, as are the prairies of Kansas and the West.

Nature is continually making efforts to cover up the bare spots of the earth, and may in the course of centuries provide some method for planting trees and restoring some kinds of forests on all these barren places; but nature cannot "make bricks without straw." In other words, trees can never be produced where no seed exists, not even by nature.

If the lumbermen, mine owners and sploiators of Colorado forests have taken away every seed tree, if the sawmill has made lumber of the last white pine tree of Michigan, and if the turpentine operator persists in making resin of baby pines in the South, while fires annually burn the young seedlings, from whence are forests to be produced for this nation during the coming generations?

Bricks without straw—trees without seeds. Some things are impossible, even for nature.

Then how can man aid nature in her work of forest restoration?

To re-clothe the Rocky Mountains by the most approved methods of the forester—that is, growing trees from seed in nurseries and then transplanting them to the slopes from which the trees have been removed—is a work of such vast magnitude that even the combined work of government, State and nation could never accomplish the gigantic task.

And to re-forest the Michigan sands with white pine by the same process is an impossible accomplishment by any human power, if this process is insisted upon. Still, unless there be seed provided, centuries must elapse ere other forests will be produced.

There is, however, a method by which nature may be aided and encouraged to perform the work which she is anxious to do, and that is, to supply the seed.

The national government expends half a million dollars annually, and Congress would cheerfully appropriate a million if the question of forest perpetuation could be accomplished, or if some means could be shown which could promise to perform this work, and could win the confidence of the people and Congress.

It is a self-evident assertion that without seed no trees can be grown.

And with an abundance of seed, unless it be properly distributed where it is needed, no forests will ever be produced.

It is also well known that the country possesses many millions of acres of land which are unsuited for any other use than for the production of forests.

It is further known that an ample supply of seed exists and is produced each year, in the locations where trees exist, to furnish seed for all the land upon which forests should be grown.

But by whom, or by what agency, are these surplus seeds to be collected in enormous quantities and properly distributed over the lands on which trees do not now exist?

The Creator has planned for squirrels and small animals and birds to distribute these seeds, yet even the Creator will not compel these agents to do this work immediately; this will take time; possibly centuries.

The proper method is for the government to embark in this enterprise; have the seeds col-

lected, scattered and protected, so that in time the forests will be renewed.

This is also a work for the States, through their established organizations, forestry so-cieties, agricultural experimental stations, agricultural colleges, or whatever organization may be in existence, totally freed of politics, and thoroughly equipped for business.

Seeds of all kinds are abundant, and not extravagantly expensive to gather. And if they are not collected, they are wasted.

Let the people awaken to the necessity of prompt and vigorous action. There is no time to lose, either in experimentation or collection of statistics, but actual planting of various kinds, suitable for the various locations and purposes.

Hundreds of millions of trees should be planted at once—and each year—and seeds provided for still greater numbers. The nation will need them long before they shall be grown.

Winter Mulch.

I would like to know through SPECIAL CROPS if anyone has had experience in winter mulching of ginseng with sawdust and if so, what is the result. I have always used leaves. I find this trouble that if the leaves are left on the plants do not all find their way up, and this spring was very early and I had to take off the leaves so that the plants could get up, and we then had a hard freeze and destroyed about half of all that I had uncovered, and those that I did not uncover have grown under the leaves and are white and weak. I have thought that sawdust would be good to keep in the frost and the plants would come up through it and it would keep the ground moist.

And how many loads of manure to the acre for the best results?

Yours truly,

Excelsior, Minn. BRACKETT'S NURSERY.

[We think you would like the sawdust, but we would like some of our subscribers to answer this, giving their experience.—ED.]

A Bird of Warning.

The blue jay is a terror to other birds, and does not receive any credit for the good he actually does. One of the worst things charged up against the jay is that he robs other birds' nests and eats the eggs. He is a loud-mouthed, arrogant bird that wants everybody in the woods to know exactly where he is. And right there is where he does something for the other birds and animals of the forest.

When the jay discovers a snake or a hawk or a crow, or anything that might do harm to the other things that live in the woods, he screams and yells and carries on at a great rate. The other birds have learned that, and when they hear the jay fussing, they would better get out of the way.

A man may be sneaking through the woods very softly, trying to get within range of a squirrel, when a jay discovers him. Then the bird begins squalling at the top of his voice, and the squirrel runs and hides. In that way he befriends the squirrel, of course, and it is possible that is why nature gave the jay a disposition to quarrel and to make a to-do over everything and everybody.

He is a beauty in coloring, and as he stays with us all the winter, he adds cheerfulness to the landscape when everything looks dead and dreary.—*George E. Burba, in Youth's Instructor.*

SPECIAL CROPS

A MONTHLY JOURNAL

DEVOTED TO THE

Interests of Ginseng Growers.

With Occasional Articles on

GOLDEN SEAL, SENEGA ROOT, AND OTHER UNUSUAL CROPS.

Entered February 3, 1903, at Skaneateles, N. Y., as second-class matter under Act of Congress of March 3, 1879.

SUBSCRIPTION PRICE, $1.00 PER YEAR. SAMPLE COPIES, 10 cts.

ADVERTISING RATES.

CHANGE

In advertising rates the following schedule will be in force after January 1, 1910, but will not affect contracts already in force.

We accept no advertisement for less than one-half inch.

One-half inch,	per	month	$ .75
One inch,	"	"	1.25
Two inches,	"	"	2.00
One-fourth page,	"	"	4.00
One-half page,	"	"	8.00
One page,	"	"	15.00

A discount of twenty-five per cent. will be allowed on all contracts calling for twelve months continuous service.

Copy may be changed every month, but if an advertisement is withdrawn for a month, you will lose the discount for the year.

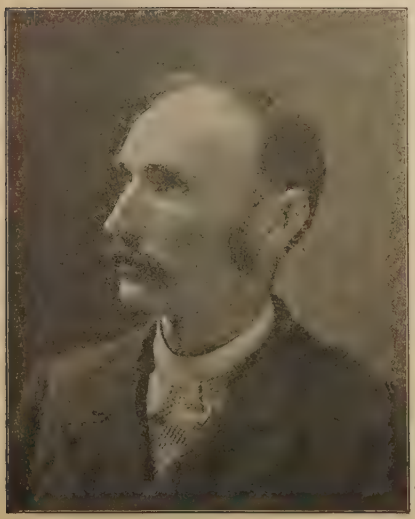
Transient advertisements, cash in advance. Other advertisements, payable on receipt of bill.

We reserve the right to reject any advertisement that appears to us unfit for our pages.

——PURLISHED BY——

C. M. GOODSPEED, Skaneateles, N.Y

Northern Ginseng Gardens



RUSSELL'S TALKS.

From observation and experience I am led to conclude that a wet, soggy condition of soil is chargeable with more disaster in Ginseng culture than perhaps all other unfavorable conditions combined.

Primary essentials to success I consider to be these: First, thorough drainage, natural or artificial; second, a friable soil, one naturally mellow and loose, or made so by admixture, so that excess of water can and will pass to lower drainage; third, such a system of shading as will convey the greater portion of rainfall into paths or drainage conduits.

Having started with these ESSENTIALS, fertilizing, mulching, spraying, etc., may be adopted with confidence, for your roots are in a congenial home and in condition to benefit by your efforts in their behalf.

I have a few thousand two and three-year Ginseng roots for sale at fair prices; also a few one-year roots of good quality.

A few thousand Golden Seal roots for early spring planting are still unbooked. Order at once.

I will buy 1908 and 1909 Ginseng seed, if prices are right. All the standard varieties of strawberry plants at fair prices. Let me name varieties and prices. Address, etc.,

A. W. RUSSELL, Mantua, Ohio.

GREEN & DAVID,

Pioneer Growers of and Dealers in

Ginseng and Golden Seal.

1908 and 1909 ginseng seed and yearling plants for sale in large or small quantities. We have 300,000 yearling plants all first class for the trade at low prices.

We make a specialty of buying **green** or **dry matured cultivated ginseng roots,** for the dry root market. Being large growers and dealers we are constantly receiving orders for special lots of ginseng which enables us to pay the highest prices.

Write us what you have to offer, or send samples correctly representing the lot and if our valuation is not satisfactory we will return samples and pay express charges both ways, or you may send us your entire lot and we will not take it too account until our valuation is approved by you.

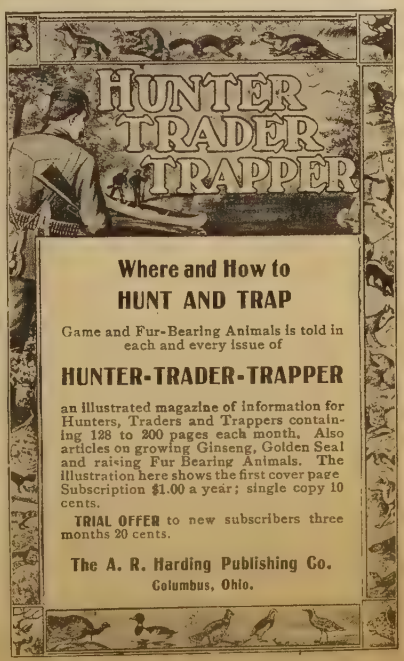
Try us, let's get acquainted, you take no chances. We remit the day we receive Sang. Correspondence solicited and promptly answered.

We can use 20,000 pounds of matured cultivated ginseng roots, green or dry.

If you have any wild Sang or Golden Seal to offer write us.

GREEN & DAVID,

OFFICE: Martinsville, Indiana.
FARM: "The Knobs 4 Miles South.



Where and How to HUNT AND TRAP

Game and Fur-Bearing Animals is told in each and every issue of

HUNTER-TRADER-TRAPPER

an illustrated magazine of information for Hunters, Traders and Trappers containing 128 to 200 pages each month. Also articles on growing Ginseng, Golden Seal and raising Fur Bearing Animals. The illustration here shows the first cover page Subscription $1.00 a year; single copy 10 cents.

TRIAL OFFER to new subscribers three months 20 cents.

The A. R. Harding Publishing Co.
Columbus, Ohio.

WE BUY

Dry Ginseng Root,

Green Ginseng Root,

Ginseng Fiber,

Ginseng Seed,

Dry Golden Seal Root,

Green Golden Seal Root,

Senega Root

Every month and every day of the month except Sunday, paying the top of the market at all times. We have paid for Ginseng in the last twelve months $52,350.00. Send us yours now and we will advise what we can pay you and hold it until we hear from you, and then if our price is not satisfactory we will return it and bear half the express charges.

C. M. GOODSPEED,
Publisher SPECIAL CROPS,
Skaneateles, - - N. Y.

The "KANT KLOG" Sprayer

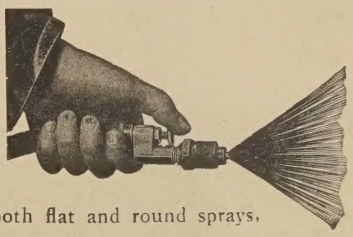
The "Kant Klog" sprayer that we are offering on the opposite page is the 1910 model with all improvements. Notice the very fine, broad spray in the above cuts. We also have a three feet brass extension for elevating the nozzle, price 35 cents.

These sprayers are shipped direct from the factory and we have found the makers to be very prompt. The price as stated on the opposite page for the brass machine is $6.50; brass extension as above, 35 cents; crooked or bent extension for spraying the under side of plants, 35 cents,—this is usually called an elbow. We have sold hundreds of spray outfits to ginseng growers and will say the one we are now offering has in the past given better satisfaction than any other machine that we have sold. With the 1910 improvements it is better than ever.

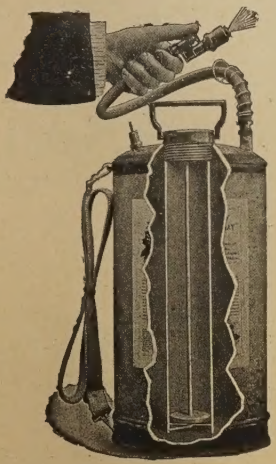
Address all orders to

C. M. GOODSPEED, Pub. Special Crops,
Skaneateles, N. Y.

A slight pressure of the thumb starts the spray. Remove it and the spray stops instantly.



Special attention is called to the new "Kant-Klog," the only nozzle that can be successfully cleaned without stopping the spray or removing the nozzle from the tree. The first and only nozzle ever made which gives both flat and round sprays, or solid streams.



"Kant-Klog." Style G.

DESCRIPTION.

The Sprayer body is made of heavy polished brass or galvanized steel, as desired. Top and bottom are dome shaped; joined to body under heavy pressure, making a complete double seam. The body is supported and further strengthened by a heavy steel band around the bottom. When completed this body is tested under double the pressure formerly used, so enabling you to get a finer spray for a greater length of time than with any sprayer we have ever made.

The air pump is made of heavy brass two inches in diameter. Hose couplings are solid brass, standard cut threads, ends heavily ribbed to prevent hose slipping off. Hose is high grade, three ply, supported by a coiled spring, bell-shaped at outer end to prevent breaking. A safety-valve is provided to allow air to escape after the necessary pressure has been obtained.

The "Kant-Klog" Nozzle furnished with this machine without extra charge, makes two bell sprays of different size, volume and fineness; one flat spray and two sizes of straight streams. The new Spring "Hose-Cock" shown above is also furnished with style G without extra cost. Sprayer holds between four and five gallons and can be carried either by carrier strap or air pump handle.

Sprays Fruits Trees, Potatoes, Vegetables, Tobacco and Cotton. For Wagons, Windows, Henhouses, Fires, Disinfecting, Etc., Etc.

DIRECTIONS.

A few seconds working of the air pump thoroughly agitates the solution and charges the sprayer with compressed air. This being a very powerful and elastic force, will, as soon as the thumb presses the "Shut-off" force out the liquid in the form of either a spray or a solid continuous stream, as desired.

After sprayer is charged, you need not stop for anything; just walk along from one row to another, the machine will supply sufficient spray to enable you to do the work as fast as you can walk. The great saving in time, labor and solution even on small sprayings will more than pay for this splendid machine the first month it is used, to say nothing of the big increase in crops as a result of spraying properly.

PRICE, with galvanized Steel body, = = $5.00.
with polished Brass body, = = 6.50.

C. M. GOODSPEED, - Skaneateles, N. Y.

Springfield Ginseng Gardens,

INCORPORATED.

Write me for wholesale prices on Ginseng and Golden Seal. Address all inquiries to : : : : : : : : : : : : : : : : .

S. BARBOUR, - - Springfield, Tenn.

GINSENG ROOTS AND SEED FOR SALE.

I will have for fall delivery as follows: 100,000 one-year and 10,000 two-year nursery roots, a large lot of choice germinated 1909 seed. These roots are growing in the deepest and richest and finest prepared beds I ever made, and will produce long parsnip-shaped and fibrous roots, which constitutes the grade A 1 for nursery stock. I know what ginseng stock should be and what germinated seed should be, and will say that few can equal the stock I sell. Prices will be quoted by August 1st.

My BOOKLET is exhausted and copies cannot be supplied. Don't send for it and trouble me to write and tell this again, besides having to return the price sent.

Wilson Ginseng Gardens. OLIVER G. WILSON, Franklin, Ky.

Seeds and Roots for Sale

Seeds and roots of Northern Maine Ginseng and other Medicinal plants. I can supply seeds or roots of almost any tree, shrub or plant that grows in this locality. Gladioli bulbs, 12 by mail postpaid for 25 cents; 100 by express $1.00. Nasturtium seeds 10 cents per packet. All other seeds 10 cents per packet postpaid.

Wm. HOYT, R. F. D. 1, DEXTER, MAINE

THE SURE DEATH TRAP.

When set it is invisible to man or animal. The only scientifically correct manner of taking fur bearing animals. It catches animals by the neck instead of the foot, killing them instantly without injury to the pelt. A humane feature that is certainly commendible; besides it saves every fur to the trapper. All progressive and discriminating trappers readily recognize the superiority of this perfect trap. If you are looking for the best trap on the market, this is it.

Price, $6.00 per doz. Sample, postpaid 50c.

Send 5 cents for our Illustrated Trappers Guide. It explains everything.

DAVENPORT TRAP CO.,

Dept. "K." DAVENPORT, IOWA

Parks Ginseng Nursery,

BOURBON, IND.

Has for sale 1909 seed grown from Northern Indiana wild stock, or New York stock bought of George Stanton, N. Y.. 1900.

All stock guaranteed to be first class.

REFFERENCE—Bourbon Banking Co., Bourbon, Ind.

WE WANT

Large dark or medium dark dry ginseng root. It must break absolutely white, wrinkles run around the root rather than up and down. Fiber removed. Roots must not be sprangly and the distance around the root should be about equal to the length of the root. In other words, we want short chunked roots, good color outside and inside, and the roots to weigh one ounce each or more. For such root we will pay $7.25 per pound. Of course we buy all kinds of dry ginseng, but the price must match the quality. To fill an order for root as described above if the root comes fully up to description we could pay even more than stated here. Address

C. M. GOODSPEED,

Publisher "Special Crops"

Skaneateles, N. Y.

GINSENG!

GOLDEN SEAL!

We do not declare to the World through Trumpets, or otherwise, that we are the largest Handlers of either Ginseng or Golden Seal in the Country, but we do say we handle from Chicago the Major Portion of the root gathered in Ohio, Michigan, Wisconsin, Indiana, Illinois, Iowa and Minnesota, aside of a good portion from other adjoining States; and our NEW YORK HOUSE very largely New York and adjacent States. Why do we?

Because, BACH FUR COMPANY pay the Highest prices the Market can afford; with our usual prompt Remittance we enjoy the Confidence and Patronage of the Pickers, Dealers and Growers of the Roots.

Whenever your Roots are ready, Ship to BACH FUR COMPANY, 121-129 Michigan Street, Chicago; or, BACH FUR COMPANY, No. 15 East 12th St., New York City.

The "HOUSE OF THE SQUARE DEAL" in Furs, Skins, Ginseng and other Roots.

CORRESPONDENCE SOLICITED.

Bach Fur Company.

..GINSENG..

Whenever you have any cultivated Ginseng ready for sale, don't fail to write us, giving particulars as to quantity, etc. We are the largest handlers of cultivated Ginseng in the country, and the only reason we succeed in getting so much root is because we are paying higher prices than other dealers. If you don't sell your root to us, you are not getting the top price.

We especially want root of good regular shape, yellow to light brown color, medium weight, wrinkled bark, white break, and properly dried—for such root we can always pay a good price. The closer the resemblance to good wild root, the greater the price. Gnarled, twisted, sprangly, forky and otherwise badly shaped roots are worth less money.

We are always willing to make offers on roots before mixing with our stock. We can then return it to you in case you do not feel fully satisfied, which however is most unlikely. In this way you can feel thoroughly safe in shipping.

It will cost you only a postal card to write us, and it may be the means of saving you a good deal of money.

J. S. LODEWICK CO.,

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